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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |  |  |
|---|-------------|----------------------|---------------------|------------------|--|--|
| 09/674,648  | 01/05/2001  | Bodo Furchheim       | 7054-101XX          | 1304             |  |  |
| 62836   | 7590        | 09/13/2010           | EXAMINER            |                  |  |  |
| BERLINER & ASSOCIATES<br>555 WEST FIFTH STREET<br>31ST FLOOR<br>LOS ANGELES, CA 90013 |             |                      |                     | DIAZ, THOMAS C   |  |  |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |  |  |
| 3656  |             |                      |                     |                  |  |  |
| MAIL DATE   |             | DELIVERY MODE        |                     |                  |  |  |
| 09/13/2010  |             | PAPER                |                     |                  |  |  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/674,648             | FURCHHEIM ET AL.    |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | THOMAS DIAZ            | 3656                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 22 July 2010.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1 and 3-5 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,3-5 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 18 October 2002 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____.   | 6) <input type="checkbox"/> Other: _____ .                        |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/22/2010 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mannesmann (GB 2050207).**

Mannesmann discloses a method for the manufacture of a camshaft from a tube 4, the camshaft having bearer rings 5 attached thereto, the method comprising the following steps; placing bearer rings, produced in a separate method and in correspondence with prospective locations of hollow cams on the cam shaft (see figures), in a high internal pressure forming tool (see fig.1 and specification) together

with the tube to be formed, whereby the bearer rings are attached by expansion of the tube in a frictional and interlocking manner (either as shown in fig.1 or by hydroforming), each of the bearer rings having outer surface and an inner surface (see fig.9), and the necessary hardness, strength, and wear resistance and wherein the bearer rings possess the same wall thickness (see fig.9); subjecting the tube to axial forces and a medium under high internal pressure so that the tube expands to form said cam regions wherein the diameter of the tube in said region are greater than the diameter of the tube at the non cam regions (tube is expanded as shown in fig.9), whereby the shaft has all cams in form and in position on a single piece (see fig.5; everything is assembled to form a single piece).

Mannesmann is silent to in a first method step prior to the high internal pressure forming, regions of the tube which are clear of the regions in which the cams are seated are kneaded or upset such that said tube regions which are clear of the cam regions are increased in thickness and/or stretched so that bearing faces, drive and/or control elements are formed from the tube itself.

As to the matter of the end regions being upset by kneading, The Examiner takes Official Notice the fact that a kneading process or round kneading in metal forming art is well known practice. It would have been obvious to perform the tube ends and regions outside of the cam regions by kneading/upsetting. In fact the placement of the dies themselves would cause such a formation. To change shape or size of any metal element by kneading would have been an obvious process choice.

Additionally, it is noted as evidentiary reference Harle (USP 5024294) discloses the concept of performing the tube with forging (upsetting) and round kneading in camshafts.

Regarding claim 3, Mannesmann discloses that between the cam shaft ends in a step prior to internal high pressure forming bearing faces and the eventual region where the cams are to be seated, are produced by round kneading and by reducing the diameter in this part to the desired size.

As to the matter of the end regions being upset by kneading, The Examiner takes Official Notice the fact that a kneading process or round kneading in metal forming art is well known practice. To change shape or size of any metal element by kneading would have been an obvious process choice.

Additionally, it is noted as evidentiary reference Harle (USP 5024294) discloses the concept of performing the tube with forging (upsetting) and round kneading in camshafts.

Regarding claim 4, Mannesmann discloses characterized in that bearing faces are produced between the cams by internal high pressure forming by expanding the tube.

Regarding claim 5, Mannesmann discloses the bearer rings are hardened in a known manner prior to being placed in the internal high pressure forming tool (the bearer rings are preformed).

***Response to Arguments***

Applicant's arguments with respect to claims 1, 3-5 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please note Swars (5868042) which also shows different functional elements 7 and 10 formed from the shaft itself.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS DIAZ whose telephone number is (571)270-5461. The examiner can normally be reached on Monday-Friday 8:30am to 5:00pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571)272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas Diaz/  
Examiner, Art Unit 3656

/Richard WL Ridley/  
Supervisory Patent Examiner, Art Unit 3656